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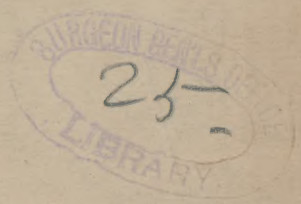
OF

PAINFUL NEUROMA OF THE SKIN.

BY

LOUIS A. DUHRING, M.D.,

CLINICAL LECTURER UPON DISEASES OF THE SKIN IN THE UNIVERSITY
OF PENNSYLVANIA, AND PHYSICIAN TO THE DISPENSARY FOR
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Pres by H. H. Harvey

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PAINTED NETWORK OF THE SKIN

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WASHINGTON, D. C.

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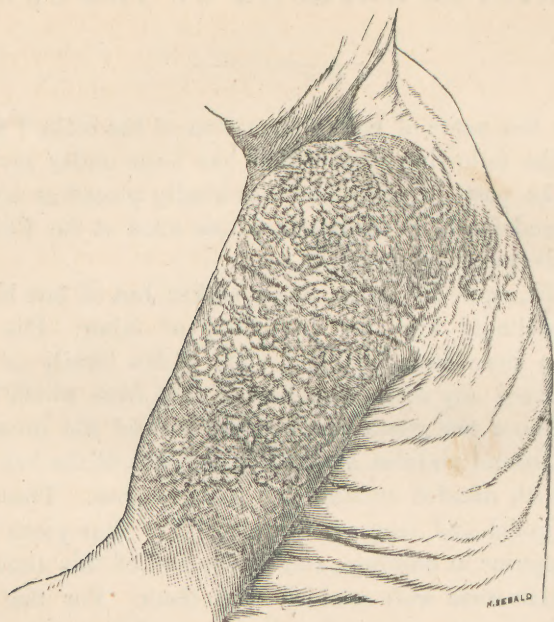
PAINFUL NEUROMA OF THE SKIN.

UNDER the name of painful neuroma of the skin, I propose to describe the following case, which has been under my observation for the past six years, and was kindly placed at my disposal by my friend Dr. F. F. Maury, in whose ward at the Philadelphia Hospital the man is at present.

David W., aged 70; Irish, boiler-maker, but of late his trouble has incapacitated him for any kind of labor. His previous health has been excellent, and none of his family or relatives ever presented any disease similar to that from which he is suffering. About ten years ago he first noticed the presence of a few, small, round nodules, situated in the skin of the left shoulder, attended with decided itching, but without pain. These nodules soon multiplied and increased in size. For four years they continued to appear in numbers, and by the end of this time the arm and shoulder were well studded with them. For the past five years their increase in number has been slower, but new ones have continued to appear up to the present time. Some of the older nodules have grown somewhat in size during the past five years. He is quite positive that it was not until three years after the first elevations were noticed, that there was any pain in or about them. Such are the important points in connection with the early history of this case. Since I first saw the patient, six years ago, there has been but little change in the appearance of the growth, with the exception that new scattered tubercles have developed at various points.

The disease is now characterized by the presence of numerous small, rounded, hard nodules, occupying the left scapular region, shoulder, and outer surface of the arm, as far down as the elbow,

as is seen in the accompanying illustration. They are incorporated with the skin and subcutaneous tissue; vary in size from that of a pin's head to that of a large pea, and at certain points are situated closely together. They are elevated from one to four or five lines above the level of the surrounding healthy skin, and present a marked tubercular, knotty appearance. They are firmly seated in the skin, and are in no instance pedicellated.



Over the shoulder and arm, at the insertion of the deltoid muscle, the tubercles are closely packed together, and the intervening skin, though not tuberculated, is involved with the same new growth. At this point it presents a solid mass of hard tubercular tissue. The surface is rough and nodular; about the scapular region as well as further down the arm, the nodules are more scattered and isolated, the skin between them being perfectly normal. The tubercles are scattered in irregular form and without definite arrangement. They do not occupy any particular nerve tract. The affected side of the body, including the arm, corresponds in size with the healthy side. The diseased skin varies in color according to locality. Where the affection is

most marked, about the shoulder, the tubercles are of purplish pink color, with a somewhat mottled appearance. Where they are isolated, their color is pinkish and lighter in shade, being more of the hue of the normal skin. But the color of the whole surface is subject to great variations, according to the position of the limb, external applications of one kind or another, as cold or heat, and the subjective symptoms. The tubercles are here and there covered with fine yellowish-white laminated scales, consisting of imperfectly formed epidermis, which are firmly attached and cast themselves off only slowly. These scales give to some of the older tubercles a whitish, glistening appearance. There are no tubercles or signs of the growth on the under surface of the arm, from the axilla down to the elbow. The skin here is smooth and normal in every respect, and can be freely handled without producing any uneasiness or pain. The tubercular mass about the shoulder and arm is warmer to the touch than other portions of the arm. During a paroxysm the part is quite hot, and remains so for some time after the pain has subsided. The nodules are all more or less painful when touched or pressed upon. There are no bloodvessels visible upon the surface of either the central mass or any of the distinct tubercles.

The original starting point of the affection appears to have been at or about the insertion of the deltoid muscle, for here the tissues are now thickest and the pain most severe. During a paroxysm of pain the tubercles and skin involved change color rapidly, passing through various shades until they become purplish and even livid at times. As the paroxysm is ushered in and while it is at its acme, the parts are seized with a quiver, which extends over the whole arm and is paroxysmal, occurring every few seconds during the height of the attack.

Intense pain, of a paroxysmal nature, constitutes the distressing feature of the disease. This was developed gradually, first showing itself about three years after the appearance of any external manifestation, and soon increased in severity, keeping pace with the development of the disease. For the last five or six years the pain and paroxysm have been about the same in degree and character. The pain during a paroxysm is excruciatingly severe, and from my repeated observations of these attacks, I doubt if

any words can fully express the amount or character of the suffering the patient undergoes. As the pain comes on he endeavors to support the affected arm with the other hand, pressing it towards the body. But he dares scarcely touch it, for so sensitive is it now that even the breath blown upon the surface excites additional pain. At one time he endures the paroxysm in the standing position, or he seats himself upon a chair or the floor, and remains in a cramped condition, unmindful of all surroundings, until the extreme pain ceases. Frequently his sufferings are so severe that he is unable to contain himself, and he cries out so vehemently and piteously that he can be heard all over the building. Frequently I have seen him roll over the floor in agony, unable to control himself.

This very intense suffering remains at its height but for a short time, from ten minutes to a half hour, when signs of abatement are noticed, and in an hour or two the attack subsides. In attempting to describe the nature of the pain, beyond the fact that it is indescribably painful, we can learn but little concerning it. He has frequently, however, compared the sensation to a stream of ice-cold water running down the arm, together with the pain of burning and pricking.

The paroxysms vary in duration and in frequency of occurrence. They also vary in intensity, according to the immediate cause which has occasioned them. When slight an attack lasts perhaps ten minutes, or if severe an hour. If quiet and undisturbed, and with the part protected, there may be but one or two paroxysms in the course of the day, but if the patient become worried or excited from any cause, or if the arm be exposed to violence, the attacks are much more frequent and correspondingly violent. Exposure to cold invariably causes pain, while rough handling or pressure of any kind is inevitably followed by severe paroxysms. Any movement of the arm, as necessarily occurs when his garments are changed, always gives rise to an attack of more or less severity. The lightest draught of wind is all-sufficient to produce a paroxysm. The pain is influenced very much by the condition of the weather. Of this fact the patient assures me positively, and the statement is confirmed by the nurses and his fellow-patients who have him continually under observation. He is always much worse the day preceding a storm or a great

change in the weather. He is always worse and suffers more during a rainy or snowy season. He is decidedly better in summer than winter.

The area of pain is much larger at the present time than it was a few years ago, but this is accounted for by the development of new tubercles in tissue previously healthy. The pain in a severe paroxysm shoots rapidly down the arm, even as far as the knuckles; it also spreads itself over the pectoral region, and up the side of the neck and head. The patient complains of a buzzing, singing sensation in the head, which he affirms is almost constant, and of late has been increasing in intensity. A neuralgic pain is also present in the head at times, which is liable to exacerbations during a paroxysm. His general health and condition are remarkably good considering his sufferings. His appetite is not wanting, and when free from a paroxysm he is able to rest and sleep quite well. The paroxysms, however, frequently awake him out of a comfortable sleep.

Before entering the Philadelphia Hospital, with a view to obtain alleviation of pain, he submitted to having the arm and shoulder thoroughly blistered on several occasions, which proceeding, he thinks, gave him some relief for a period of six weeks. But his memory is rather vague concerning the past, and it is to be considered that this statement cannot be accepted without reserve. Since his admission to the hospital various means and remedies for his relief have been tried, but without the desired result. Hypodermic injections of morphia have frequently been administered during the paroxysms, with a view of checking their violence, but even with large doses the end has scarcely been attained. The relief afforded by this means is not material, and the after-effects upon his head are so unpleasant that he prefers to endure the pain. Steam baths to the part have also been employed, but with little relief. Direct dry heat undoubtedly affords more ease than any other application that has been made, and he is never so comfortable and free from pain as when sitting close to a hot stove or fire with the arm exposed to the heat. When a paroxysm comes on he at once seeks the fire and there remains until the pain has abated.

With the hope of ascertaining the nature of the disease, the man consented to the excision of several of the tubercles. Three were

selected in different regions as being most characteristic of the affection. Two of these were situated in the central mass, about the shoulder, and the third was a well-marked, comparatively recent, isolated tumor, seated in the skin of the back about one inch to the right of the spinal column. The patient was etherized, and the growth removed, care being taken to include a considerable portion of the subcutaneous tissue with the incision. Unusually severe pain, continuing for several days, followed the operation, due in a great measure to the state of excitability which the whole proceeding occasioned, excitement of mind being always followed by an aggravation of the sufferings. Very little hemorrhage occurred. The wounds were very slow to cicatrize. The nodules directly after removal were of the size of large peas, irregularly rounded and defined; firm and quite hard to the touch, and of a dirty white color. Cutting one of them open, vertically, the internal surface presented a dull white color, affording scarcely any blood or fluid upon pressure. The cut surface appeared homogeneous and solid throughout to the naked eye. The growths were not found to possess any filamentous attachments of any kind. The specimens were immediately placed in alcohol and a solution of bichromate of potassa, preparatory to microscopical examination. After carefully imbedding small vertically cut pieces in wax, thin sections were made with a razor and examined with glycerin. Some of the specimens were stained with a chloride of gold solution of one-half per cent. strength, while others were colored with a carmine solution. Many sections were submitted to close examination, with the following result. The epidermis was irregular and uneven in structure, and here and there completely broken down. The rete was imperfectly developed in certain of the sections, at one point showing normal growth and arrangement, while in other specimens there appeared an abnormal distribution of the younger cells. A singular concentric formation of the cells of the rete was here and there noticed, resembling the globular arrangement of epithelioma, but this condition was not universal, occurring only in certain sections. The papillary layer was irregularly developed. The papillæ were here and there greatly hypertrophied. The corium was abnormally infiltrated with new connective tissue growth, which was firm in structure. The tissues beneath and the mass

of the specimen consisted of a solid, resistant-looking connective tissue, irregularly developed and uneven in arrangement. The bulk of the tissue was old in appearance and well felted together, the new cell elements being entirely wanting. The connective tissue fibrils were closely packed in places forming wave-like bands. There were also numerous free fibrils of elastic tissue scattered here and there through the specimens, particularly in the deeper portions of the tubercle, where in places they formed a delicate network. Here and there filaments appeared isolated, resembling very much fine nerve fibres. But among the many sections examined with the utmost care, it was impossible to find either nerve trunks or branches.

This case, I venture to remark, is without a parallel in medical literature. After careful research I have been able to find only two cases which bear any likeness to it, and these, it will be observed, present symptoms quite different from those in our case.

In Plate VII. of Dr. Smith's atlas of neuroma will be found the portrait of a man whose disease bears a striking resemblance to that under our care, but upon investigation it will be noticed that the affection differs in important particulars, and that, though at a glance it appears to be the same form of disease, it in reality is not.

The case is that of a farmer named Michael Lawlor, æt. 32, admitted to the Whitworth Hospital, under the care of Dr. Corrigan, with symptoms of gastro-enteritis. During the investigation of the case, the abdomen and body were found to be studded with numerous small tumors situated *beneath* the integument. Many of them were about the size of peas, movable, and of firm consistence. But some were larger, and one existed about the tuberosity of the ischium, which was the size of a swan's egg. It was slightly movable in the transverse direction and equally solid throughout. The integuments were healthy, and could be moved freely over the surface of the tumor, pressure upon which caused pain. The sensation was of numbness rather than of pain, the patient stating that the limb felt as if it were asleep. The large tumor was the first to which the notice of the patient had been attracted, and was of the size of a gooseberry when first observed. Its appearance was preceded by a sensation in the

part "like the trickling or dropping of cold water down the limb."

Another tumor, larger than that just described, of whose existence the patient was not aware, was found placed deep in the hypogastrium, and another, the size of a walnut, situated upon one of the branches of the right anterior crural nerve. These three tumors were painful when pressed upon, the others in great number over the body were the source of no uneasiness. They were all movable from side to side, were oval in form, and of solid consistence. The patient became very much emaciated from the effects of the gastro-enteritis, and in this condition it was evident that the tumors were seated along the course of nerves. The patient died, and the autopsy revealed these tumors to be seated upon the nerves in great numbers. Indeed the examination disclosed the fact that all the nerves of the body were more or less affected with these neuromatous tumors, more than two thousand distinct growths having been discovered.

This is perhaps the most interesting example of general multiple neuroma upon record, but from a review of the prominent features it is manifest that the disease cannot be considered as identical with that of David W. The subjective symptoms here are altogether different, as well as the form of growth itself, which must be regarded as a typical instance of the ordinary multiple neuromatous tumor. The corium, so markedly affected in our case, is in no way involved, the tumors being situated deep beneath the skin.

The other case to which I have referred as being somewhat similar is reported by Vallender and quoted by Virchow. But the symptoms in this instance likewise are very different, a few of the large tumors here being alone painful, and these only upon pressure.

But although the case of David W. is unique as regards development, the general features are of such a character as to admit of no hesitation in deciding to which class of pathological formations it belongs. Without doubt to the neuromata, for here only will the affection find its position in pathology. Viewing the case on the other hand, from a clinical standpoint, with

no other group of morbid growths is it possible to account for the violent symptoms accompanying the disease.

Reported examples of general multiple neuroma, where the tumors occurred in numbers, are rare, Virchow estimating that probably not more than thirty cases are upon record. They are usually free from the pain which is so constant with the single neuroma, a fact very difficult to account for, but which is mentioned in connection with most of the reported cases, as for instance in the case of Michael Lawlor. We find the symptoms in our case, however, completely at variance with this usually accepted statement, pain not only being present, but also most violent neuralgic paroxysms, exactly like those described in connection with the painful subcutaneous tubercle. Were these symptoms alone considered, the case might well be grouped with this latter tumor, so minutely do they correspond. But there are important points of difference between our case and the painful tubercle. This little tumor, as described by Wood, Descot, Dupuytren, and Paget, is never a multiple growth, but a solitary tumor, rarely ever more than one existing upon the same patient. Moreover it is always spoken of as being situated *beneath* the subcutaneous tissue scarcely perceptible to the eye. It is also always found to be freely movable under the skin, and never in any way attached to it or involved with it. Additional points of difference there are which preclude the two forms of disease from being considered identical.

The writer is indebted to the following works which have been of invaluable assistance in the study of the case under consideration: Virchow, *Die Krankhaften Geschwülste*, Berlin, 1863; Descot, *Affections Locales des Nerfs*, Paris, 1825; W. Wood, *Edinburgh Med. and Surg. Journ.*, 1812; *Trans. of Med.-Chir. Soc. of Edinburgh*, 1829; R. W. Smith, *A Treatise on the Pathology, Diagnosis, and Treatment of Neuroma*, Dublin, 1849; Craigie, *Elements of General and Pathological Anatomy*, 1858; Miller, *Principles of Surgery*, 1844; Wedl, *Pathological Histology*, Syd. Soc. translation, London, 1855; Dupuytren, *Leçons Orales de Clinique Chirurgicale*, Paris, 1832; Paget, *Lectures on Surgical Pathology*, London, 1870.

